

December 2003

To: Fellow Citizens of the Commonwealth

From: Susan Tierney, Chair, Massachusetts Ocean Management Task Force

**Re: Draft Principles and Preliminary Recommendations –
For public comment**

On behalf of the Massachusetts Ocean Management Task Force, I am pleased to make available for public review and comment the Task Force's Draft Principles and Preliminary Recommendations for managing the Commonwealth's ocean resources.

In June 2003, Environmental Affairs Secretary Ellen Roy Herzfelder established the Massachusetts Ocean Management Task Force with the charge to:

- Define our guiding principles for the use of state waters and ocean resources,
- Examine Massachusetts coastal policies and the adequacy of the legal framework,
- Determine data requirements for managing state waters, and
- Examine the organization of governance over state waters to ensure that statewide interests are met.

The Ocean Management Task Force includes governmental members from Massachusetts state agencies and local governments as well as public members representing various interest groups and academic institutions. It also involves "ex officio" representatives from federal agencies, the state legislature, and the Massachusetts Congressional delegation. The Task Force's members are listed below. The Task Force is staffed by personnel from several state environmental agencies.

Since its appointment, the Ocean Management Task Force has been working to understand the rich and diverse features of the Commonwealth's ocean resources, the character of "public trust" resources held and managed on behalf of the citizens of the Commonwealth, the existing set of governmental statutes, regulations and processes that affect the protection and use of these ocean resources, and possible ways to enhance the management of these resources for the benefit of the citizens of the Commonwealth at present and for the future.

The starting point for the Task Force's consideration of these issues is the fact that the oceans of the Commonwealth – generally extending three miles out from the shores of the state – are held in the public trust. The waters and lands under the waters of the state's oceans are "public trust resources", owned by the State in trust for the benefit of the people. Like all public trusts, the purpose is to manage resources in a way that preserves and enhances the public's right to use and enjoy the resources and where appropriate to allow certain private uses of trust resources.

We were also particularly mindful of current uses and natural resource qualities of the state's oceans, and our rich cultural, social and economic heritage that has been tied so closely to the ocean and our varied interactions to it. We took as our point of departure the current state of resources and uses, growing tensions between existing and proposed uses and resource needs, and the current set of laws and regulations affecting them, in order to consider what legal authorities and action might be needed to assure that the Bay State's public trust ocean resources are adequately protected while also fostering sustainable uses of them. And we noted the types of tensions that are growing with respect to competing uses of the state's ocean resources and the relationship between oceans under state versus federal versus regional jurisdiction.

After months of research, analysis, consultation, and discussion, the Task Force members have developed Draft Principles and Preliminary Recommendations for managing the Commonwealth's ocean resources, and are now making them available to the public for review and comment.

The Draft Principles are our proposed statement of the main beliefs and values that we think are appropriate to guide public policy decisions about the protection and use of the Commonwealth's ocean resources. The Preliminary Recommendations are the result of our "thinking to date" with respect to the legal, public policy and information tools the Commonwealth needs to have and exercise to assure appropriate protections of these resources and to allow use of them for various public and private purposes today and in the future.

To date, the Task Force has carried out its work by focusing on several clusters of activities:

- "Framework" issues: What new laws, regulations or policies are needed to establish an overall framework for managing the Commonwealth's ocean resources?
- "Policy" issues: Whether or not a new statutory framework for managing the state's ocean resources is enacted, what improvements are needed in the current set of regulations and policies that exist under current law in Massachusetts?
- "Use Characterization" issues: What are the various ways in which the Commonwealth's ocean resources are used today?
- "Information and Data" issues: What improvements in data collection, monitoring, research, or analysis are needed to enable us to gauge the health of our ocean resources, the character of our uses of them, and the interactions between the two?
- "Public Outreach" issues: What steps are necessary to ensure appropriate public input into the deliberations of the Task Force itself and into the development of ocean resource management approaches and policies in the future?

Our Preliminary Recommendations reflect these categories. Please note in particular that if the Commonwealth were to adopt a new framework along the lines we suggest here, some of the other policy-related recommendations might no longer be relevant, since in effect they would be superseded by the new framework for ocean resource management. Also note that our public outreach suggestions to date are woven into other recommendations, but we may eventually want to add some additional ones as well.

We invite you to carefully review these Draft Principles and Preliminary Recommendations, and then to share your comments and views on them. We welcome written comments as well as any oral comments that you might like to submit, and we look forward to hearing what you agree with, what you disagree with, and why. We also seek comment on how you think that our Draft Principles and Preliminary Recommendations can be improved. Written comments can be submitted at any time to our address (oceanmgtinitiative@state.ma.us). Oral comments can be made to members of the Task Force during public meetings to be held on the following dates at the following locations:

- **Boston**, December 10, 3 pm – 5 pm, John Joseph Moakley Courthouse, 1 Courthouse Way
- **Worcester**, December 10, 7 pm – 9 pm, Broad Meadow Brook, 414 Massasoit Road
- **Yarmouth**, December 11, 7 pm – 9 pm, Yarmouth Council on Aging, 528 Forest Road
- **Gloucester**, December 15, 7 pm – 9 pm, Cape Ann Historical Association, 27 Pleasant Street
- **New Bedford**, December 15, 7 pm – 9 pm, New Bedford Public Library, 613 Pleasant Street

Please check the website (<http://www.state.ma.us/czm/oceanmgtinitiative>) for directions and further information about these public meetings.

Draft Principles For Massachusetts Ocean Management December 2003 Draft

Our oceans embody extraordinarily dynamic and complex environments that are influenced by a combination of natural forces and human activities. Healthy ocean ecosystems are vital to human health and welfare. Human activities above, below and on the ocean surface, as well as on land, can and should be managed to allow both use and protection of ocean resources. Principles for managing those activities should embody an ethic of ocean stewardship that protects the public trust, values biodiversity, respects the interdependence of ecosystems, fosters sustainable uses, makes use of the best available information and encourages public participation in decision-making.

1. Protect The Public Trust

Ocean resources are public in nature and held in trust by government for the use and enjoyment of its citizens, now and in the future. Management of ocean resources should maximize societal benefits while minimizing harm to the public's right to use and enjoy the ocean. Management policies should foster enhanced access to the ocean by the public.

2. Value Biodiversity

The diversity of ocean life is important for maintaining healthy and balanced marine and terrestrial ecosystems. A diversity of marine species also provides important societal benefits, some yet to be discovered. Oceans should be managed to protect and enhance the abundance and diversity of native species.

3. Respect the Interdependence of Ecosystems

The health of an ocean ecosystem depends on management policies that respect the interdependence of air, land and water resources and the interconnection of all species to each other and their habitat. In addition, ecosystems often cross international, federal, state and local boundaries. Therefore, state ocean management policies should reflect this interdependence and should be coordinated with other jurisdictions.

4. Foster Sustainable Uses

Human needs, such as for food, energy, recreation and commerce, require ocean management policies that balance competing interests. For the benefit of present and future generations, human uses of the marine and coastal environments should be ecologically sustainable. Ocean management policies should be flexible enough to allow adjustment for evolving human needs and values, emerging technologies and changing environmental conditions.

5. Use Best Available Information

Effective ocean management should adapt to our evolving knowledge and understanding of the ocean environment. Management decisions should be based on the best available information and expertise. Public officials should maintain and enhance the collection of biological, chemical, physical, social and economic information and communicate this information to the general public.

6. Encourage Public Participation in Decision-Making

Effective ocean management requires the education, support and involvement of citizens, stakeholders and public officials. Education and outreach should encourage an ethic of ocean stewardship. The public should have the opportunity to be engaged in the process that creates ocean management policy. Management policies should ensure that citizens and stakeholders have access to clear, objective and relevant information on which to base their judgments and positions.

Preliminary Recommendations

Massachusetts Ocean Management Task Force December 2003

The Task Force seeks comments on the following draft recommendations:

FRAMEWORK ISSUES

The Ocean Management Task Force's Frameworks Working Group has attempted to develop a framework for comprehensive ocean resource management that addresses multiple dimensions of the ocean (that is, the seafloor, water column, surface, air rights, view sheds), with consideration of such issues as:

- What is the planning area? How do we take into account state-wide interests versus local, regional and even federal interests?*
- Does the Commonwealth have authority (in statute and regulation) to regulate uses and protect resources? If not, should additional authority be proposed? If so, do the existing authorities have the appropriate types and scope to protect resources and/or allow uses, and if not, what changes are needed?*
- Is zoning the appropriate approach to take? If so, do we take a use approach or an impact approach?*

Recommendation #1:

The Frameworks Working Group recommends that the Secretary of Environmental Affairs introduce legislation for a new, comprehensive Ocean Resource Management Act, whose centerpiece would be the creation of new ocean resource management plans which set forth management objectives and strategies for various discreet ocean planning areas and activities within the state waters of the Commonwealth.

The Act would retain and strengthen existing environmental protections associated with the ocean as a public trust resource while streamlining the array of existing statutes governing the use and protection of the Commonwealth's oceans. If Recommendation #1 were adopted, it would supercede many of the policy-related recommendations we have made in the next section, that are designed to improve the existing mechanisms for managing the state's ocean resources in the absence of a new law.

The Act would have the following key components:

- Introduction – discuss the compelling need for comprehensive ocean resource management;
- Ocean Resource Management Principles – present the principles to guide subsequent regulations and ocean resource management plans;
- An explanation of the state-wide interests that should be addressed in Ocean Resource Management Plans;
- A statement of legal authority (which would likely modify the Ocean Sanctuary Act, while retaining existing protections, modify the Chapter 91 regulations, and add additional authorities if need be) to:
 - develop Ocean Resource Management Plan(s), with primary responsibility at state level, with mechanisms for strong municipal and citizen participation;
 - Upon approval of an Ocean Resource Management Plan for a certain area that meets certain statutory requirements, to streamline governance of the public trust ocean resources by providing compulsory guidance and coordination to relevant state agency actions;

- Establish basic standards for allowable uses, and impact control and resource protection;
- Establish authority and in some cases requirements for data collection and dissemination;
- Establish authority for the collection of fees for use of the ocean for infrastructure development projects that are subject to permitting by the state, with fees based on the economic value of the activity or the impacts of the activity or the volume of ocean resources used by the activity; and
- Assignment of the authority to develop, adopt and enforce ocean resource management plans to some entity within state government (see below).

The ocean resource management plans authorized by the new Act would be developed and adopted by the state, with common elements, which might be articulated through agency guidelines for development of ocean resource management plans and implementation actions related to them. The common elements might include efforts to:

- Define a planning area (e.g., the geographic scope of a particular ocean resource management plan, and the activities or systems covered by the plan);
- Define the ocean resource management vision, goals and objectives;
- Characterize the current resources and uses of the planning area: inventory and analysis of resources and uses (historic, existing, potential, future); inventory the tools available for public management of these resources and uses;
- Identify natural, social, cultural, and economic opportunities/constraints, with conflict areas;
- Develop alternative management scenarios based on Ocean Resource Management Principles, vision, state and regional goals and objectives, analysis of features, from which a final management strategy would be chosen;
- Adopt the preferred ocean resource management approach for a particular planning area;
- Assign responsibilities for implementation of plan elements;
- Articulate the mechanisms through which the plan will be implemented (e.g., connections to subsequent regulatory or other agency action(s), appeals of agency actions, state budgetary process and elements, coordination with various federal actions, etc.);
- Develop management guidance for applicable regulations; and
- Establish a process and schedule for the subsequent updating of the plan(s).

The Frameworks Working Group has identified various options for the state's organizational/ decision-making structure that will be responsible for implementing the Ocean Resource Management Act and developing the ocean management plan. For example, the lead role could be assigned to:

- The Secretary of Environmental Affairs, with a stakeholder advisory committee and inter-secretariat concurrence mechanism; or
- A new Inter-Secretariat Council (including, for example, members from various environmental and economic agencies of the Commonwealth's state government) and chaired by the Secretary of Environmental Affairs, with stakeholder advisory committee; or
- A new appointed Board, chaired by the Secretary of Environmental Affairs and with some members appointed to represent various constituencies, with other ex-officio (public official) members

Common to all options would be staffing by appropriate Executive Office of Environmental Affairs (EOEA) personnel, and a decision-making structure for periodic adoption and approval of ocean resource management plans, with public input, and with requirements that certain agency regulatory and budgetary actions be consistent with the ocean resource management plans.

Justification for Recommendation #1: The Task Force believes that due to the high value and unique nature of ocean resources and uses, as well as the public trust character of these resources, the Commonwealth needs a comprehensive ocean resource management act to proactively plan and regulate our ocean resources. The ocean waters, water-sheet and lands under the waters of the Commonwealth are currently managed through a somewhat ad-hoc collection of single-sector oriented laws, regulations and policies. Recent proposals to construct energy and telecommunications infrastructure and other

projects in our waters have revealed some gaps, overlaps and inconsistencies in authority. Comprehensive legislation will give us the flexibility to establish a strong foundation for the protection and management of ocean resources.

POLICY ISSUES

The Ocean Management Task Force's Policy Working Group has analyzed the existing set of policies, regulations and laws relating to the state's management of ocean resources, and attempted to: 1) determine the shortcomings and strengths of our existing legal/regulatory/policy framework; 2) identify gaps, examine best practices (from other states and nations), and craft appropriate policy, regulatory and statutory recommendations; and, 3) Develop recommendations that improve federal/state/local and interagency and cross-jurisdictional coordination.

The policy-related issues analyzed and Preliminary Recommendations described below are proposed to enhance the Commonwealth's ocean resource management capabilities in the absence of and/or in anticipation of the adoption of a more comprehensive framework for ocean resource management, as set forth in our Recommendation #1. Some of these recommendations are tied to or may still be relevant even if our Recommendation #1 were adopted, however, as noted below.

In addition to those Preliminary Recommendations specifically proposed below, the Task Force is also interested in making recommendations with respect to two areas, and solicits constructive comments on these issues: (a) approaches to adopting and designing appropriate actions to mitigate and offset impacts of various uses (e.g., proposed infrastructure projects) on other uses (e.g., fisheries) and the natural ocean environment; and (b) methods and techniques for analyzing the cumulative impacts of different uses (e.g., infrastructure, fisheries, shipping, and so forth) on each other and on the natural resources of the Commonwealth's oceans.

Recommendation # 2:

Even if a new Ocean Resource Management Act is not enacted and implemented, the Commonwealth should seek to streamline the state planning and regulatory review processes that exist under current law while maintaining standards of environmental protection, opportunities for public input, and execution of public trust responsibilities. The Commonwealth should consider enhancing the role of the EOEA Secretary (or another high ranking official or Board) in matters relating to planning and policy determinations on occupation of, and compensation for, use of public trust ocean waters and lands under the water.

Justification for Recommendation #2: Administration of the state's public trust responsibilities for planning and policymaking affecting use and protection of our ocean resources is currently divided among several state agencies with overlapping responsibilities. The current system, through its division of oversight, is less transparent and more duplicative than it could be, and can lead to delays and regulatory burdens (to the state, to the applicant and to the public) associated with the permitting of projects. A more streamlined approach could enhance both accountability and efficiency.

Recommendation #3:

The state's Coastal Zone Management (CZM) office should continue to periodically review the state's enforceable CZM program policies to identify any new or changed policies that are warranted in order to adequately protect the state's ocean resources. Such a process requires CZM to seek approval from the

National Oceanic and Atmospheric Administration (NOAA) of such state CZM program policy changes so that the state's Federal Consistency Program reflects current state policy. Once such federal approval occurs, then the new coastal program policies would serve as the basis for Federal Consistency Reviews carried out by CZM.

Depending upon the substantive character of a new Ocean Resource Management Act (if one is passed, along the lines we've proposed in Recommendation #1) and any Ocean Resource Management Plans that flow from it, there could be new attributes of federally licensed or permitted activities that directly affect the state's ocean resources in the coastal zone. The state's CZM office should incorporate these aspects into enforceable CZM program policies as appropriate, and seek federal approval for these policies by NOAA. Once such approval is granted, CZM would review permitted activities that directly affect the state's ocean resources in the coastal zone to ensure that federal actions are consistent with state policies.

To support the implementation of such new enforceable elements of the state's CZM program policies, CZM should issue and publish guidance that describes permitted activities or actions conducted by federal agencies that will directly affect the ocean resources of the Massachusetts coastal zone, as well as those types of actions and permitted activities that are generally consistent with new state CZM program policies.

Justification for Recommendation #3: The federal/state boundary dividing the ocean is derived from law and not by virtue of oceanographic or other natural systems or processes. The boundary does not prevent activities on one side of the line from affecting resources and uses on the other side. In recognition of this fact, under the Federal Consistency Review program exercised by the state's CZM program, the Commonwealth has the power to ensure that federal actions in or directly affecting a state's coastal zone meet federally approved state standards. CZM is the agency created under federal law that is charged with developing federally-approved enforceable coastal program policies and a coastal management plan for Massachusetts, and for assuring that the program policies and plan reflect current state policy. Once the policies and plan are approved by NOAA, the CZMA requires federal activities "conducting or supporting activities directly affecting the coastal zone" to be "consistent" with the state plan "to the maximum extent practicable". In order for this process of state and federal cooperation and policy consistency to function properly, CZM must update the state's coastal program policies and coastal management program to reflect changes in state policies affecting ocean resources. We believe that an ecologically based ocean resource management plan, developed jointly by state agencies under new statutory authorities in the state with appropriate comment from the public and as approved by the federal government as part of enforceable CZM policies, is an effective tool to manage boundary issues and resources.

Recommendation #4:

The regulations implementing the Ocean Sanctuaries Act (OSA) (302 CMR 5.00) should be updated unless or until a new Ocean Resource Management Act is enacted and implemented (at which time, the more comprehensive Ocean Resource Management Act could replace the Ocean Sanctuaries Act). In particular, the OSA regulations should be updated relating to the Public Necessity and Convenience Test, to provide greater clarity to the regulated community and the public as to standards for project review in Ocean Sanctuaries. We also recommend that the Massachusetts Department of Environmental Protection (DEP), the Department of Conservation and Recreation (DCR), and the Massachusetts Environmental Policy Act (MEPA) office develop a Memorandum of Understanding governing protocols for interagency coordination on project reviews involving projects in Ocean Sanctuary areas.

Justification for Recommendation #4: The OSA and its implementing regulations were drafted to prohibit certain activities (i.e., offshore oil and gas leases) in the 1970s. The OSA and its regulations have

generated questions from the regulated community and other permitting agencies with regard to issues of compliance with the OSA. Updating the OSA as part of a wider ocean resource management effort should be a top priority. Even in the absence of statutory changes, there is a need for updating the regulations implementing the OSA, as well as the need for better coordination among agencies with responsibilities for reviewing projects in existing sanctuaries.

Recommendation #5:

Current fees charged by the Commonwealth under Chapter 91 authority for tidewater displacement and tideland occupation should be examined and adjusted (i.e., increased or decreased) where appropriate. This should occur even if a new Ocean Resource Management Act is not enacted and implemented, and should be dovetailed with that Act's implementation if it is adopted. The process to revise fees should take into consideration not only "rental" concepts (which now form the basis for establishment of fees), but also fees tied to the impacts caused by the regulated activity and/or the economic value of the regulated activity itself (along the lines of the royalty-type payments).

Any revision to the Chapter 91 fees should develop ways to further protect water dependant uses and other statewide public interests. The Commonwealth should consider establishing a dedicated account where revenues generated from Chapter 91 fees can be used to advance ocean management objectives, including, but not limited to: increasing public access to the ocean; maintenance for coastal open spaces and port infrastructure; planning scientific research, monitoring and data collection; assuring ocean regulatory compliance and enforcement; and supporting other related policy purposes (such as developing, implementing and enforcing Ocean Resource Management plans, if the Ocean Resource Management Act is adopted along the lines proposed in Recommendation #1).

Justification for Recommendation #5: Chapter 91 protects the public's right to fish, fowl, and navigate in public trust lands (filled or flowed tidelands, great ponds, and navigable streams). Chapter 91 currently requires occupation fees, essentially rent paid to the Commonwealth for use of public trust lands. These fees are artificially low, do not distinguish between preferred water dependant uses and other uses, and revenues generated from these fees are simply deposited into the general fund. The fees should be revised to better reflect the economic value of these public trust lands and the impacts on the regulated activities on the public's ocean resources, with the revenues from these fees dedicated for ocean related purposes.

Recommendation #6:

The Commonwealth (in particular, the MEPA process, the EOEA resource management and permitting agencies, the Energy Facilities Siting Board, and the Massachusetts Historical Commission), should develop and implement methodologies and standards for analysis – and if possible, mitigation – of visual, cultural, and aesthetic impacts of proposed projects to be sited and permitted in the state's ocean resources. This type of review should occur whether or not a new Ocean Resource Management Act is enacted and implemented, and (if it is) should be included as part of the basis for developing elements of a particular region's ocean resource management plan.

Justification for Recommendation #6: We understand that visual and aesthetic impacts are inherently subjective, and yet we also recognize that visual and aesthetic impacts are real and important features of many infrastructure development projects (whether on land or in the ocean). Given the importance of these impacts in certain instances, we believe that the transparency and consistency of the state's permitting decisions would be enhanced by having the state endeavor to establish at a minimum a more common or uniform set of methods and standards for presentation of data on visual and aesthetic impacts.

Recommendation #7:

Even if the state adopts a more comprehensive framework for managing the Commonwealth's ocean resources, the state's agencies should continue their on-going efforts to improve coordination with federal, regional, and local agencies with regard to ocean policy development and project review.

Justification for Recommendation #7: The subcommittee recognizes that significant progress has been made recently in inter-jurisdictional coordination. Additional efforts to improve coordination will further strengthen policy-making and project review, better engaging the public and increasing public confidence in the process, and reflecting the inherent interdependence of the jurisdictions that affect the state's ocean resources.

Recommendation # 8:

All state permitting agencies should review and modify, as needed the public notification requirements associated with their permitting processes to assure that their procedures allow for meaningful public participation. In particular, agencies should implement any changes needed to assure that various members of the public have timely access to information about the process, applications for permits, licenses, and plans for use of the ocean resources, and opportunities for comment on proposed agency actions on those permits and licenses. Where additional steps are necessary to provide relevant information and contact those parties not accustomed to participate in commenting to agencies, we believe that the agencies should plan for and implement improved public outreach.

Justification for Recommendation #8: While the existing comment periods associated with the current environmental review processes are generally appropriate (and in many cases prescribed by statute), we believe that outreach and notification procedures regarding review and permitting processes could be improved significantly. The length of the comment period is not a problem, but the general level of awareness of the review process does not maximize input from interested parties.

Recommendation #9:

Whether or not the Commonwealth enacts and implements legislation providing for the development, implementation and enforcement of ocean resource management plans, the Commonwealth should ensure that the environmental agencies have the statutory authority to designate and protect areas that have special, sensitive and/or unique estuarine and marine habitat and life, with decisions to exercise that authority based on sound scientific information and clear procedural steps. These designated areas for special levels of protection could include areas that require particular protection of important fisheries and fishing activities, sensitive and/or unique estuarine and marine habitats and species, and/or the protection and study of marine biodiversity and ecosystems.

Justification for Recommendation #9: In certain circumstances, existing state authorities do not adequately protect marine species and habitats. Resources such as juvenile and spawning fish habitat, seagrass meadows, kelp beds, cobble reefs, soft corals, and others are important to the overall ecosystem structure and function and warrant increased conservation efforts. Statewide planning of ocean resources may identify a need to restrict certain activities in discrete areas of the ocean for the protection of important fisheries, sensitive and/or unique habitats and species, and/or the protection and study of marine biodiversity and ecosystems. The current regulatory framework does not clearly grant any agency the explicit authority to restrict certain uses for protection of certain resources (e.g., the state's Division of Marine Fisheries cannot prohibit the development of certain structures in productive fishing grounds nor can it restrict fishing in an area for purposes of general ecological research). Ocean resource managers should have the authority to regulate these areas for protection of important

fisheries, sensitive and/or unique habitats and species, and/or the protection and study of marine biodiversity and ecosystems.

DATA TRENDS AND NEEDS

The Ocean Management Task Force's Data Trends and Needs Working Group has analyzed the existing state of data and data-collection activities with respect to the Commonwealth's ocean resources. Additionally, this working group has undertaken efforts to (1) summarize ocean resources data, key trends and gaps in data; (2) summarize ecologically and economically important trends; (3) determine if relevant data is readily available for planning purposes; (4) determine what data is needed to support ocean resource management purposes; and (5) provide recommendations to the Ocean Management Task Force to facilitate data collection, management, analyses and interpretation in support of ocean resources management.

Recommendation #10:

As a basis for sound management of the ocean resources – with or without new state authorities to develop comprehensive ocean resource management plans – a comprehensive ocean resources monitoring and research plan should be developed. This monitoring and research plan should encompass living and non-living estuarine and marine resources, as well as studies of the economic and other uses of these resources. The plan should serve as a type of “roadmap” for work to be carried out by others (e.g., academic institutions, permit applicants, public agencies), and should be periodically reviewed and adjusted to reflect improved understanding of resources and their patterns of use, integrate new management approaches and incorporate innovative survey techniques. The plan should also provide guidelines on standardized protocols for conducting surveys to enhance data consistency.

The monitoring and research plan should cover both environmental features of the ocean resources (living marine resources, such as commercial, recreational and non-target species, benthic community, shellfish and invasive species, estuarine and marine habitat, water and sediment quality, and physical oceanographic and weather patterns), as well as social and economic uses of these ocean resources (including uses of the water column, the lands under the water, and the water sheet). The plan should lay out a complete scope to evaluate cumulative impacts from activities such as coastal alteration projects, fisheries, and resource management approaches (fishery and watershed planning), and natural processes.

Development of this monitoring and research plan should be led by the state, but rely on an integrated approach that includes municipal, state and federal government resource agencies, flexibility for innovative approaches and identification of research needs.

Additionally, the state should commit to funding the development of this roadmap for data collection, analysis and research, and participate in supporting the work needed to effectively carry it out.

Justification for Recommendation #10: Appropriate and effective management of ocean resources, including marine habitat and life and human uses of the ocean, requires sufficient understanding of the resources achieved through a comprehensive monitoring and research plan. There are many state and federal monitoring and research programs, non-government organizations and private researchers that monitor and study resources within their jurisdiction in order to achieve specific needs of projects. At the same time, however, there are a variety of ocean resources that are not monitored or are poorly monitored, leading to inadequate understanding of ocean resources. Indeed, in recent past, certain monitoring programs carried out historically by state and other public agencies have had to terminate or

severely limit their data collection and monitoring activities, in part because of budgetary imperatives. Additionally, there is a general lack of understanding (as to type, distribution, abundance) of marine species and habitats that require special attention.

In particular, cumulative impacts are difficult to investigate and describe because of inadequate data, patchy data collection and incomplete understanding of natural variation and human-induced effects on marine habitat and life. Ecosystem effects include, but are not limited to, changes in the type and quality of estuarine and marine habitats and species assemblages, are also difficult to describe because of inadequate data. Without guidance on approaches to evaluate cumulative impacts and targeted studies to investigate human-induced perturbations, an analysis of cumulative impacts will be unattainable, and cumulative impacts will remain unknown in Massachusetts.

The Task Force believes that such a “monitoring and research roadmap” – along with the actual resources to carry out critical monitoring activities – is essential to form a basis for sound management and use of the Commonwealth’s ocean resources.

Recommendation #11:

We recommend increased public dissemination of certain data collected on the Commonwealth’s resources, whether part of today’s existing permitting and resource management programs or as part of a new, more comprehensive ocean resource management framework as we have proposed in Recommendation #1. Such information might include: an index of all currently state-funded ocean resource and use data; data collected in support of permit applications; and data collected with state-issued scientific permits. Such data should be made available to interested parties, with documentation to set the context for their proper use. The index should include long-term and short-term data sets, project specific resource surveys and have links to the actual data and reports. To the extent feasible, all data producers should be responsible for making their data available to the public according to protocols established by the state, and via web sites, web-mapping tools or through existing publicly available databases (such as MassGIS).

Justification for Recommendation #11: Data on ocean resources and uses in Commonwealth waters are relatively sparse, inconsistently collected, and largely difficult for potential users to locate. To the extent that public funds support the collection and/or interpretation of this data or support public permitting of private activities (e.g., chapter 91 permits, MEPA reviews, approvals to site facilities in Ocean Sanctuaries), it is incumbent on the state agencies to make data available to the public, consultants, students, researchers and other users. Substantial amounts of data are collected in support of permit requests and scientific research, primarily by environmental consulting companies and academic scientists. Even when private entities (such as developers of energy facilities or telecommunication facilities and commercial fishermen) are required to supply data to state agencies, such data are generally not accessible by the public, may use multiple and varied data protocols, and are generally difficult for parties to access and combine with other information. MassGIS, Massachusetts Ocean Resources Information System (MORIS) and Atlantic Coastal Cooperative Statistics Program (ACCSP) are examples of data management systems that index and provide access to many existing datasets; however, many datasets remain unavailable and there is not a central listing of all data sets. Access to data, including data from state funded programs, permit requirements and research, is imperative to improved ocean resource management and requires a modest investment in funding.

Recommendation #12:

As a corollary to Recommendations #10 and 11, we recommend that when state permits require that environmental monitoring be carried out by the project applicant as part of publicly permitted activities, such monitoring should use more standardized protocols for data collection. The standardized monitoring

protocols should be designed to aid managers in assessing environmental suitability and impacts of proposed and permitted activities and gain understanding of individual and cumulative impact of projects and uses. This approach could mean additional requirements for monitoring of permitting activities.

Justification for Recommendation #12: Many permitted activities require that the developer carry out studies on an on-going basis to monitor the impacts of the activities on resources in the area. In recognition of the extent of existing permitted activities and the increasing number of large coastal alteration projects in Massachusetts (and projects located in the Commonwealth's ocean resources), monitoring requirements should be standardized, including pre- and post-construction monitoring. The extent of data collected for permitted activities can provide substantial insight into ocean resources quality and function, the duration of environmental impacts and ultimate success of environmental recovery, within and adjacent to the footprint of a particular project. In the future, evaluation of on-going monitoring programs should take place to evaluate the effectiveness of the program and facilitate making needed changes to the monitoring program over time. The monitoring data should be provided to state agencies and indexed to allow efficient access to monitoring results by the state and the public. Standardized monitoring protocols and improved access to permit-related data can assist in the assessment of potential impacts of future projects, enhance the ability of state resource agencies to evaluate future proposals and develop monitoring programs, and set the foundation for evaluating cumulative impacts.

Recommendation #13:

An advisory group of marine and fishery scientists should be appointed to evaluate and determine baseline living marine resource population levels, habitat conditions and contaminant levels to determine a reasonable measure of environmental quality, appropriate management goals and actual changes in ocean resources through time. Additionally, the group could periodically study trends in these resources relative to the baseline, indicating improvements and degradation in the character of the resources. This group could contribute to the comprehensive ocean resources monitoring and research plan identified in Recommendation #10. This advisory group should advise senior state public official(s) responsible for stewardship and management of the state's ocean resources.

Justification for Recommendation #13: Current population levels and habitat conditions are a result of centuries of human exploitation and degradation interacting with natural variability. Baseline population levels and habitat conditions and the influence of anthropogenic impacts and natural processes are largely undocumented, and the identification of appropriate baselines, such as the period and status of a resource at a realistically undisturbed state, is needed for ocean resource management. Historic data is available but is difficult to incorporate because of the format of historic resource publications (not electronic). A thorough review of historic data will enable resource managers to determine baseline environmental conditions, although these data will likely have to be supplemented with contemporary data collection. These historic population levels and habitat conditions will support the development of management goals, such as restoration plans, and assessment of changes in ocean resources through time.

USE CHARACTERIZATION ISSUES

The Ocean Management Task Force's Use Characterization Working Group has attempted to: 1) characterize what uses/activities are occurring in what areas of the Commonwealth's oceans (including: industrial, commercial, recreational, military, preservation, temporary, permanent uses), including identifying the areas of highest conflict, the areas that accommodate multiple uses, and the areas and uses that may be changing; and 2) develop both narrative descriptions and graphic presentations that

depict and summarize these uses of the state's ocean resources. As part of these efforts, the following Preliminary Recommendations have been proposed:

Recommendation #14:

To support fully informed and inclusive decision-making, ocean management planning should be supported by inventories of the uses and resources of the state's marine waters. Such inventories should be kept up-to-date to indicate not only existing uses of the state's oceans, but also emerging trends in new or changing types and patterns of use. The inventories should, to the extent possible, depict uses of the bottom of the oceans, water column and surface water, as affected by season of the year as appropriate. Such inventories would be useful for ocean resource management, even in the absence of more comprehensive ocean resource planning authorized by a new state statute.

Justification for Recommendation #14: Current permitting and management decisions are made largely on ad hoc evaluations of impacts to existing uses and resources. Ocean management planning requires, by definition, a comprehensive understanding of the location, nature, and interrelationship of uses and resources.

Use characterizations should be an evolving product. There should be a baseline use characterization for all state waters developed from a synthesis of existing data. Comprehensive use characterizations should be developed even in advance of the development of ocean resource management plans – but at a minimum, are a necessary first element (inventory and analysis) for the development of such regional plans. The level of information required should be a function of the breadth of the proposed goals and management actions of such plans. Use characterizations developed to support these plans should be used to prioritize and standardize the allocation of resources given to data collection across state agencies with marine-related management responsibilities, and the geographic areas for which plans are being developed should be the priority areas for data acquisition efforts.

Recommendation #15:

Use characterization data need to be GIS-based and organized on maps and databases to illustrate uses and resources on the seafloor, in the water column, and/or at the ocean surface, as well as uses in the airspace over these areas, and when activities (human and natural) occur in time. Additionally, to the extent feasible, they should include upstream and coastal areas that affect the ocean resources.

To support baseline use characterizations and resource management decisions that rely upon these use characterizations, baseline mapping for all state waters should be organized around themes useful for ocean resource management, with the possibility of reliance on the following main geographic and socio-economic themes:

- point locations of infrastructure located in ocean resources (physical structures or jurisdictional lines);
- patterns of industrial, commercial and recreational transit over the surface;
- natural macro-features: bathymetry/surficial geology/habitat/circulation/wind and tidal currents;
- location and seasonal distribution of fisheries and fisheries resources
- socio-economic trends, such as commercial, industrial, recreational, cultural, military, Homeland Security, and others
- utilization types and trends, such as extractive, transient, stationary, resource-dependent, and others

These baseline characterizations should include a companion trends analysis to identify both historical and potential future use areas within state waters. GIS mapping should support development of ocean resource management plans by illustrating uses and resources at a level of detail as described above.

Mapping should clearly represent the ubiquity of recreational and commercial boating, while identifying areas where these uses are geographically and/or seasonally concentrated. Mapping should also clearly represent the relationship between boating and transient fish resources.

Finally, decisions regarding use characterizations must be coordinated closely with decisions regarding data acquisition and management.

Justification for Recommendation #15: GIS is a powerful information technology that has the ability to make data accessible and useful to the public, planners, and regulators as they think critically about how the ocean should be managed. GIS-based mapping of the state's ocean resources should be tiered, evolving, and scaleable. Data is the basis of maps; maps are the basis of use characterizations. To facilitate the development of effective ocean resource management plans, efforts to map and characterize coastal and marine uses must be supported by accurate, representative data that is maintained and presented in an organized, accessible manner.

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